

**Notice of Allowability**

Application No.

10/695,658

Examiner

Michelle R. Connelly-Cushwa

Applicant(s)

BERNARD ET AL.

Art Unit

2874

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-35.
3. ☒ The drawings filed on 28 October 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>0304</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                           | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

## DETAILED ACTION

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with S. Peter Ludwig on June 23, 2005.

The application has been amended as follows:

Claim 1, line 7, --non-uniform—has been inserted before "complex temperature";

Claim 4, line 2, "the initial" has been changed to --an initial--;

Claim 4, line 3, "anneals" has been changed to --anneal--;

Claim 7, line 3, "in locally" has been changed to --by locally--;

Claim 11, line 2, "the position-calibration" has been changed to --a position-calibration--;

Claim 12, line 2, "the initial" has been changed to --an initial--;

Claim 17, lines 3-4, "within said gain flattening filter is incorporated" has been deleted;

Claim 20, line 3, "for allowing" has been deleted;

Claim 21, line 9, --non-uniform—has been inserted before "complex temperature";

Claim 33, lines 3-4, "within said gain flattening filter is incorporated" has been deleted.

***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

The prior art documents submitted by applicant in the Information Disclosure Statement filed on March 5, 2004 have all been considered and made of record (note the attached copy of form PTO-1449).

***Drawings***

Seven (7) sheets of formal drawings were filed on October 28, 2003 and have been accepted by the Examiner.

***Specification***

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Allowable Subject Matter***

Claims 1-35 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art cited on attached form PTO-892 is the most relevant prior art known, however, the invention of claims 1-35 distinguishes over the prior art of record for the following reasons.

Regarding claims 1-20; the claims are allowable over the prior art of record because none of the references either alone or in combination disclose or render obvious a method for manufacturing a FBG (fiber Bragg grating) as defined in claim 1, comprising the step of generating a controlled non-uniform complex temperature profile along the FBG with a heating means according to the characteristic data for providing an accurate controlled anneal process of the FBG in combination with the other limitations of claim 2. Claims 2-20 depend from claim 1.

Regarding claims 21-35; the claims are allowable over the prior art of record because none of the references either alone or in combination disclose or render obvious an annealing-trimming apparatus for manufacturing a FBG (fiber Bragg grating) as defined in claim 21, comprising a heating means operatively connected to the processing means for generating a controlled non-uniform complex temperature profile along the FBG according to the characteristic data in combination with the other limitations of claim 21. Claims 22-35 depend from claim 21.

Ishii et al. (US 6,819,834 B2) discloses a method an apparatus for forming a fiber Bragg grating (FBG, 5; see Figures 1 and 2) in which the grating is formed by ultraviolet light and heat trimming processing is carried out by uniformly heating the grating part (5) as a whole at a predetermined temperature for a predetermined amount of time (see column 6, lines 47-53, and column 12, lines 4-6). Ishii et al. does not disclose or suggest generating a controlled non-uniform complex temperature profile along the FBG.

Devegowda (US 2003/0192174 A1) discloses a method and device for forming a FBG in which the grating (device, 20, may optionally be a fiber Bragg grating; see Figure 19) is annealed by heating the grating to a predetermined temperature for a predetermined time, wherein the whole grating is heated to that temperature (see paragraphs [0080]-[0086] and Figure 19). Devagowda does not disclose or suggest generating a controlled non-uniform complex temperature profile along the FBG.

Chen et al. (US 6,356,681 B1) discloses a method and apparatus for trimming the optical path length of an optical fiber component including a grating (14; See Figures 1 and 2) in which isolated areas (A) of the fiber, the areas located before and/or after the grating, are annealed (see column 3, lines 17-19). Chen et al. does not disclose or suggest generating a controlled non-uniform complex temperature profile along the FBG.

Hence, there is no reason or motivation for one of ordinary skill in the art to use the prior art of record to make the invention of claims 1-35.

### ***Conclusion***

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

*Michelle R. Connelly-Cushwa*  
Michelle R. Connelly-Cushwa  
Patent Examiner  
June 23, 2005